Florida Department of Health

Middle East Respiratory Syndrome (MERS) Guidance	Focus Area: Surveillance and Investigation

Guidance document number 2015-1

Middle East Respiratory Syndrome (MERS) Surveillance, Investigation, and Reporting Guidance for County Health Departments (CHDs)

Version 2.0 June 26, 2015

Note: This document may become outdated as situations change. Documents on this topic dated after June 26, 2015 supersede this one. This document will be posted on the Bureau of Epidemiology website http://www.flhealth.gov/mers

Summary:

- **Surveillance:** Counties should apply the definition of patient under investigation (PUI) for MERS to determine if laboratory testing and public health investigation is needed.
- **Investigations:** Investigations should occur for individuals meeting the definition of PUI for MERS within the same day of CHD notification.
  - County epidemiology staff should alert their regional epidemiologist and laboratory liaison, or the on-call epidemiologist if afterhours, of all PUI for MERS.
  - Urgent or weekend laboratory testing must be arranged *prior* to specimen submission to the Bureau of Public Health Laboratories (BPHL).
- **Reporting Patients Under Investigation (PUI) and Cases:** PUI or persons meeting the confirmed or probable case definition for Middle East Respiratory Syndrome (MERS) should be entered into Merlin **within twenty-four hours (including on weekends)**.
- **CHD laboratory results notification process for MERS:** CHDs will be notified of positive and negative laboratory results for MERS from the BPHL via Merlin ELR.

Background (Updated):

The Middle East respiratory syndrome coronavirus (MERS-CoV) was first reported to cause human infection in September 2012. As of June 15, 2015, greater than 1150 laboratory-confirmed cases of MERS-CoV infection have been reported by World Health Organization (WHO), including over 470 deaths. All reported cases have been linked through travel or residence to the Arabian Peninsula or to an outbreak linked to multiple healthcare facilities in the Republic of Korea.

The MERS coronavirus appears to be circulating throughout the Arabian Peninsula, primarily in Saudi Arabia, where the majority of cases (>85%) have been reported since 2012. Several cases have been reported outside the Middle East. Most of these infections are believed to have been acquired in the Middle East, and then exported outside the region with no or rare instances of secondary transmission. An outbreak of MERS is ongoing in the Republic of Korea. As of June 15, 2015, more than 150 cases and 15 deaths have been epidemiologically linked to multiple Korean healthcare facilities. This is the largest MERS outbreak outside of the Middle East. While concerning, it appears the outbreak is resolving following implementation of effective infection control measures by Korean public health officials and health care providers.

The first cases of MERS in the United States were identified in mid-May, 2014 among travelers from Saudi Arabia that traveled to Indiana and Florida.

The purpose of this document is to provide updated guidance to county health department staff on the surveillance, investigation, and reporting of MERS in Florida. For the latest situation updates visit www.cdc.gov/coronavirus/mers/

1. Surveillance for MERS (Updated):

A patient under investigation (PUI) is a person with the following characteristics:

A. Clinical: History of fever AND respiratory illness **of potentially infectious origin** that may include pneumonia or acute respiratory distress syndrome.

AND hospitalization for respiratory illness

AND ONE or MORE of the following:

- history of travel to or from a country in or near the Arabian Peninsula[2] or the Republic of Korea in the 14 days before symptom onset;
  OR
- residency in a country in or near the Arabian Peninsula[2] or the Republic of Korea in the 14 days before symptom onset;
  OR
- close contact[3] with a symptomatic person who developed fever and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula[2] or the Republic of Korea;
  OR
- is a member of a cluster of patients with severe acute respiratory illness (e.g. fever and pneumonia requiring hospitalization) of unknown etiology in which MERS-CoV infection is being evaluated, in consultation with state and local health departments;
  OR
- close contact[3] with a confirmed or probable case of MERS.

OR

B. Clinical: history of fever OR respiratory illness of potentially infectious origin

AND sought health care (hospitalization not required)

AND ONE or MORE of the following:

- a history of health care employment[1] in or near the Arabian Peninsula[2] or the Republic of Korea within 14 days before symptom onset;
  OR
- a history of hospital visitation (e.g. emergency room visit, doctor's appointment, visit someone in the hospital) in or near the Arabian Peninsula[2] or the Republic of Korea within 14 days before symptom onset;
  OR
- close contact[3] with a confirmed or probable case of MERS-CoV.

Patients with lower respiratory illness should also be evaluated for common causes of community-acquired pneumonia[3], guided by clinical presentation and epidemiologic and surveillance information. For these patients, testing for MERS-CoV and other respiratory

pathogens can be done simultaneously. Positive results for another respiratory pathogen (e.g., influenza) should not necessarily preclude testing for MERS-CoV because co-infection can occur.

The MERS PUI criteria are subject to change based on the volume of testing requests and other factors.

1. Travelers who visited or worked as health care providers while traveling to the Arabian Peninsula region or the Republic of Korea may be at increased risk for MERS-CoV exposure.
2. Countries considered in the Arabian Peninsula and neighboring include: Bahrain; Iraq; Iran; Israel, the West Bank, and Gaza; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syria; the United Arab Emirates; and Yemen.
3. Close contact is defined as a) being within approximately 6 feet (2 meters) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection–see Infection Prevention and Control Recommendations); or b) having direct contact with infectious secretions (e.g., being coughed on) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection–see Infection Prevention and Control Recommendations). Data to inform the definition of close contact are limited. At this time, brief interactions, such as walking by a person, are considered low risk and do not constitute close contact.

MERS Case Definition:

Confirmed: A confirmed case is a person with laboratory confirmation[1] of MERS-CoV infection.

Probable: A probable case is a PUI with absent or inconclusive[2] laboratory results for MERS-CoV infection who is a close contact[3] of a laboratory-confirmed MERS-CoV case.

Suspect: A person that meets the definition of a PUI, with MERS-CoV laboratory tests pending.

1. Confirmatory laboratory testing requires a positive PCR on at least two specific genomic targets or a single positive target with sequencing on a second. Confirmatory testing is performed by CDC.
2. Examples of laboratory results that may be considered inconclusive include a positive test on a single PCR target, a positive test with an assay that has limited performance data available, or a negative test on an inadequate specimen. Testing performed by BPHL.
3. Close contact is defined as a) any person who provided care for the patient, including a healthcare worker or family member, or had similarly close physical contact; or b) any person who stayed at the same place (e.g. lived with, visited) as the patient while the patient was ill.

2. Investigations of PUI for MERS:

- County epidemiology staff should investigate each report of possible MERS to determine if the PUI for MERS criteria are met.
- Counties should contact their Regional Epidemiologist and Laboratory Liaison, or the BOE on-call epidemiologist (850-245-4401) if after hours, if a PUI is identified or to ask questions. Case investigations should occur within twenty-four hours of CHD notification.
- Conduct patient/proxy or healthcare provider interviews and record reviews to obtain essential information, which includes: history of present illness, medical history, travel dates, risk factors, differential diagnoses, microbiology test results.
- Complete the FDOH MERS PUI form: http://www.flhealth.gov/mers

Infection Control Considerations

- While a PUI for MERS is receiving healthcare, it is important that standard, contact, and airborne precautions are used.
- See detailed CDC recommendations: http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html

Management of Cases and PUI

- A *PUI* may be discharged before MERS is ruled out. Decisions to discharge a PUI for MERS is up to the treating physician.

- The patient should be provided surgical masks and asked to isolate themselves at home until fever free for 24 hours without antipyretic medication (i.e. acetaminophen, ibuprofen).
- Holding a PUI at a healthcare facility should be done to provide necessary clinical care, not for the purpose of the public health investigation.
- Close contacts to a PUI for MERS should self-monitor for symptoms, isolation is not routinely needed if they remain asymptomatic.
- Close contacts who develop illness should also be managed as a PUI for MERS, specimens should be collected, and they should be isolated at home, or while seeking healthcare, until MERS testing at BPHL is completed.
- Home care guidelines for MERS: http://www.cdc.gov/coronavirus/MERS/hcp/home-care.html

- For *confirmed* MERS cases the decision to discharge is based on public health and medical assessment with the Bureau of Epidemiology (BOE) on a case-by-case basis, including presence of symptoms and multiple negative specimens (preferably sputum).

Contact investigation for confirmed MERS cases (*guidance to be developed)*
http://www.cdc.gov/coronavirus/mers/interim-guidance.html

3. Laboratory Testing and Specimen Collection (Updated)

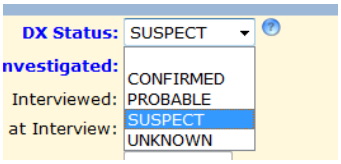
- If PUI criteria are met, contact your regional BPHL location to arrange for MERS-CoV testing. You may also contact your regional epidemiologist and laboratory liaison (Map) or the after-hours BOE on-call epidemiologist (850-245-4401).
- PUI's with the following criteria will be prioritized for laboratory testing: PUI that are a healthcare worker with patient contact in a country known to have MERS cases, or a PUI known close contact of a confirmed or probable MERS case.
- To increase the likelihood of detecting MERS-CoV CDC recommends collecting multiple specimens from different sites at different times after symptom onset. Ideally, ALL the following specimens should be collected and submitted to BPHL for PUI.
    - Collect the following specimens for each PUI:
        - **PRIORITY** Lower respiratory specimens: sputum (induced if necessary), bronchial alveolar lavage, tracheal aspirate, or pleural fluid in a sterile container.
        - Upper respiratory specimens: nasopharyngeal AND oropharyngeal swab (which can be placed in the same tube of viral transport medium).
        - Serum specimen (RED top or TIGER top tube)
- Multiple specimens, on different days, may be needed to rule out MERS-CoV infection.
- **Ensure specimens are collected according to BPHL and CDC guidelines (see below) and are labeled appropriately.**
- It is recommended that the CHD request the health care facility identify one person that is responsible for ensuring all necessary specimens are collected, labeled, and shipped in a timely manner (ideally the same day as report).
- Complete the BPHL DH1847 lab requisition form.
- Specimens can be shipped overnight for weekday arrival to BPHL in Jacksonville, Miami, or Tampa following notification to the appropriate BPHL.
- *Shipments arriving on the weekend must be pre-authorized by BPHL*.
- Specimens can be sent using category B shipping containers.
- Additional details are available at http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html

Notification Process of Laboratory Results for Specimens Tested by BPHL:

- In most circumstances results will be available in 1-2 business days.
- Final laboratory results (positive or negative) will be sent to counties via their **Merlin ELR Task List** in the same manner they would identify new positive results of other reportable diseases tested at BPHL.

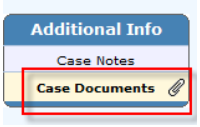
4. Reporting MERS PUI and cases in Merlin:

- Individuals meeting the confirmed, probable, and PUI (suspect) case definition for MERS should be entered into Merlin.
- PUI should be entered **within twenty-four hours of CHD notification.**
- PUI should be listed as SUSPECT under the DX Status until the laboratory results have been returned.



  - Please attach ALL BPHL results to the Merlin case created for each PUI.
  - If BPHL results are negative, the PUI record can be marked for deletion.
  - If BPHL results are positive, the case status will need to be updated and the complete MERS case report form completed.

- Scan and attach under the case documents section the FDOH MERS PUI form http://www.flhealth.gov/mers as soon as the initial interview information (including which specimens have been collected for submission to BPHL) is complete. The laboratory results section of the form can be updated when results are final.



5. Resources

Additional guidance and key points may be found on the FDOH MERS website: http://www.flhealth.gov/mers

For further information please contact BOE at 850-245-4401.